

What is claimed is:

1. A diaphragm valve for selectively directing a fluid to one or more of a plurality of destinations, the diaphragm valve comprising:

a first port through which the fluid is to enter or exit the diaphragm valve to be directed to one or more of the plurality of destinations;

a second port through which the fluid is to exit the diaphragm valve en route to a first destination;

a third port through which the fluid is to exit the diaphragm valve en route to a second destination;

a diaphragm adjustable between a first position and a second position, wherein

the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the second port while the diaphragm is positioned at the first position, and

the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the third port while the diaphragm is positioned at the second position; and

a housing having at least a portion made from a transparent material such that the diaphragm is visible during operation of the valve, wherein

the housing defines an interior passage between the first, second and third ports.

2. The diaphragm valve according to claim 1 further comprising a valve stem operatively connected to the diaphragm to extend into a branched portion of the interior passage.
3. The diaphragm valve according to claim 2, wherein the valve stem includes a plunger that cooperates with an aperture within the diaphragm valve while the diaphragm is positioned at the first position, the communication between the plunger and the aperture substantially preventing the flow of the fluid between at least one of the first and second ports and the third port.
4. The diaphragm valve according to claim 2, wherein a position of the valve stem is axially extended into the branched portion of the interior passage while the diaphragm is positioned at the second position.
5. The diaphragm valve according to claim 4 further comprising a plurality of fins disposed on the housing and extending axially along the branched portion of the interior passage to provide radial support to the valve stem while the valve stem is extended into the interior passage adjacent to the third port.
6. The diaphragm valve according to claim 1 further comprising a plurality of fins disposed on the housing and extending axially along a branched portion of the interior passage.

7. The diaphragm valve according to claim 1, wherein the housing includes a removable cap made from a transparent material.
8. The diaphragm valve according to claim 1, wherein the housing includes a threaded portion to receive a compatibly threaded fastener to secure the diaphragm to the housing.
9. The diaphragm valve according to claim 8, wherein the threaded portion of the housing is made from a metal.
10. The diaphragm valve according to claim 1 further comprising a seat disposed to communicate with the diaphragm when the diaphragm is positioned at the second position to direct the fluid between the first and third ports while generally preventing the flow of the fluid through the second port.
11. The diaphragm valve according to claim 10, wherein the communication between the diaphragm and the seat is visible through the at least portion of the housing made from the transparent material.
12. The diaphragm valve according to claim 1, wherein the diaphragm is pneumatically adjusted to the first and second positions.

13. The diaphragm valve according to claim 1, wherein the interior passage defined by the housing includes a linear portion having a branched portion extending generally perpendicularly from the linear portion.

14. The diaphragm valve according to claim 1, wherein the first port is coaxial with the second port.

15. A diaphragm valve for selectively directing a fluid to one or more of a plurality of destinations, the diaphragm valve comprising:

- a first port through which the fluid is to enter the diaphragm valve to be directed to one or more of the plurality of destinations;

- a second port through which the fluid is to exit the diaphragm valve en route to a first destination;

- a third port through which the fluid is to exit the diaphragm valve en route to a second destination;

- a diaphragm adjustable between a first position and a second position, wherein

- the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the second port while the diaphragm is positioned at the first position, and

- the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the third port while the diaphragm is positioned at the second position; and

a plastic housing having a metallic threaded portion to receive a compatibly threaded fastener to secure a periphery of the diaphragm to the housing.

16. The diaphragm valve according to claim 15 further comprising a valve stem operatively connected to the diaphragm to extend into a branched portion of the interior passage.

17. The diaphragm valve according to claim 16, wherein the valve stem includes a plunger that cooperates with an aperture within the diaphragm valve while the diaphragm is positioned at the first position, the communication between the plunger and the aperture substantially preventing the flow of the fluid between at least one of the first and second ports and the third port.

18. The diaphragm valve according to claim 16, wherein a position of the valve stem is axially extended into the branched portion of the interior passage while the diaphragm is positioned at the second position.

19. The diaphragm valve according to claim 18 further comprising a plurality of fins disposed on the housing and extending axially along the branched portion of the interior passage to provide radial support to the valve stem while the valve stem is extended into the interior passage adjacent to the third port.

20. The diaphragm valve according to claim 15 further comprising a plurality of fins disposed on the housing and extending axially along a branched portion of the interior passage.

21. The diaphragm valve according to claim 15, wherein the housing includes a removable cap made from a transparent material.

22. The diaphragm valve according to claim 15 further comprising a seat disposed to communicate with the diaphragm when the diaphragm is positioned at the second position to direct the fluid through the third port while generally preventing the flow of the fluid through the second port.

23. The diaphragm valve according to claim 22, wherein the communication between the diaphragm and the seat is observable through at least a portion of the housing made from a transparent material.

24. The diaphragm valve according to claim 15, wherein the diaphragm is pneumatically adjusted to the first and second positions.

25. The diaphragm valve according to claim 15, wherein the housing is made from a transparent plastic.

26. The diaphragm valve according to claim 25 wherein the diaphragm is visible through the transparent plastic during operation of the diaphragm valve.

27. The diaphragm valve according to claim 15, wherein the interior passage defined by the housing includes a linear portion having a branched portion extending generally perpendicularly from the linear portion.

28. The diaphragm valve according to claim 15, wherein the first port is coaxial with the second port.

29. A diaphragm valve for selectively directing a fluid to one or more of a plurality of destinations, the diaphragm valve comprising:

- a first port through which the fluid is to enter the diaphragm valve to be directed to one or more of the plurality of destinations;

- a second port through which the fluid is to exit the diaphragm valve en route to a first destination;

- a third port through which the fluid is to exit the diaphragm valve en route to a second destination;

- a diaphragm adjustable between a first position and a second position, wherein

- the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the second port while the diaphragm is positioned at the first position, and

- the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the third port while the diaphragm is positioned at the second position;

a housing defining an interior passage through which the fluid that enters the diaphragm valve will travel to exit the diaphragm valve through at least one of the second and third ports; and

a plurality of fins disposed on the housing and axially extending along a branched portion of the interior passage.

30. The diaphragm valve according to claim 29 further comprising a valve stem operatively connected to the diaphragm to extend into the branched portion of the interior passage.

31. The diaphragm valve according to claim 30, wherein the valve stem includes a plunger that cooperates with an aperture within the diaphragm valve while the diaphragm is positioned at the first position, the communication between the plunger and the aperture substantially preventing the flow of the fluid between at least one of the first and second ports and the third port.

32. The diaphragm valve according to claim 30, wherein a position of the valve stem is axially extended into the branched portion of the interior passage while the diaphragm is positioned at the second position.

33. The diaphragm valve according to claim 29, wherein the housing includes a removable cap made from a transparent material.



34. The diaphragm valve according to claim 29, wherein the housing includes a threaded portion to receive a compatibly threaded fastener to secure the diaphragm to the housing.

35. The diaphragm valve according to claim 34, wherein the threaded portion of the housing is made from a metal.

36. The diaphragm valve according to claim 29 further comprising a seat disposed to communicate with the diaphragm when the diaphragm is positioned in the second position to direct the fluid between the first and third ports while generally preventing the flow of the fluid between the first and second ports.

37. The diaphragm valve according to claim 36, wherein the communication between the diaphragm and the seat is visible through the at least portion of the housing made from the transparent material.

38. The diaphragm valve according to claim 29, wherein the diaphragm is pneumatically adjusted to the first and second positions.

39. The diaphragm valve according to claim 29, wherein the interior passage defined by the housing includes a linear portion having a branched portion extending generally perpendicularly from the linear portion.

40. The diaphragm valve according to claim 29, wherein the plurality of fins includes four (4) fins that are separated by approximately ninety (90) degrees from each other on the housing.

41. The diaphragm valve according to claim 29, wherein the first port is coaxial with the second port.

42. A diaphragm valve for selectively directing a fluid to one or more of a plurality of destinations, the diaphragm valve comprising:

- a first port through which the fluid is to enter the diaphragm valve to be discharged at one or more of the plurality of discharge locations;

- a second port through which the fluid is to exit the diaphragm valve at a first discharge location;

- a third port through which the fluid is to exit the diaphragm valve at a second discharge location;

- a diaphragm adjustable between a first position and a second position, wherein

- the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the second port while the diaphragm is positioned at the first position, and

- the fluid that enters the diaphragm valve will be discharged from the diaphragm valve generally through the third port while the diaphragm is positioned at the second position;

a transparent plastic housing defining an interior passage through which the fluid that enters the diaphragm valve will travel to be discharged from at least one of the second and third ports;

a plurality of fins disposed on the housing and axially extending along a branched portion of the interior passage; and

a metallic threaded portion provided to the housing to cooperate with a compatibly threaded fastener to secure a periphery of the diaphragm to the housing.